

What is Claimed is:

1. A lead-free solder alloy comprising 0.1 – 3 wt% of Cu, 0.001 – 0.1 wt% of P, 0 – 0.1 wt% of Ge, and a balance of Sn.
2. A lead-free solder alloy as claimed in claim 1 wherein the content of Ge is 0.001 – 0.1 wt%.
3. A lead-free solder alloy as claimed in claim 1 which further contains one or more strength-improving elements.
4. A lead-free solder alloy as claimed in claim 3 wherein the one or more strength-improving elements comprise at least one of Ag and Sb in a total amount of at most 4 wt%.
5. A lead-free solder alloy as claimed in claim 3 wherein the one or more strength-improving elements comprise at least one element selected from the group consisting of Ni, Co, Fe, Mn, Cr, and Mo in a total amount of at most 0.5 wt%.
6. A lead-free solder alloy as claimed in claim 1 which further contains one or more melting point-lowering elements.
7. A lead-free solder alloy as claimed in claim 7 wherein the one or more melting point-lowering elements comprise at least one of Bi, In, and Zn in a total amount of at most 5 wt%.
8. A soldered joint formed from a lead-free solder alloy as claimed in claim 1.
9. A soldered joint as claimed in claim 8 wherein the soldered joint is formed by flow soldering.

10. A method of performing flow soldering comprising using a lead-free solder alloy as claimed in claim 1.

11. A method as claimed in claim 10 wherein the flow soldering is wave soldering.